

High Temperature Properties of Nuclear Materials

PI: Heng Ban- Utah State University Collaborators: NA

Program: General Scientific Infrastructure

ABSTRACT:

The goal of project is to purchase key equipment to strengthen core nuclear capability in the strategic thrust area of high temperature materials characterization at Utah State University (USU). Many USU engineering faculty members are active in nuclear energy R&D in materials related topics and thermal hydraulics. In 2012, a nuclear engineering research center, Thermohydraulics and Materials Properties Center (TMP), was approved by the Board of Trustees of USU and by the Board of Regents of the Utah High Education Commission. Specifically, a high temperature laser flash system will be purchased to fill an infrastructure gap and to enhance research closely aligned with, yet complementary to, DOE and INL programs. The PI has leading expertise in material thermal conductivity and thermal diffusivity, characterization and is supporting DOE nuclear energy programs, such as INL INEST, VHTR (NGNP), FCR&D, and ATR NSUF, yet lack this particular equipment. The equipment will also play a useful role in Pl's current NEUP R&D proposal as a reference standard. While directly support missions of DOE programs and benefit many faculty members involved in nuclear materials research (current collaborative projects in nuclear materials with other universities), the project will also attract and train undergraduate and graduate students to nuclear research and education at USU. The equipment and instrumentation from this project will be part of the overall effort establishing a nuclear a nuclear engineering emphasis area within the mechanical engineering curriculum at USU. The academic department, college and university all support the endeavor and committed to support the effort.